



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re the application of: Claesson et al.

Attorney Docket No. 05-002

Application No: 09/927,578

Examiner: Wozniak, James S

Filed: August 6, 2001

Art Unit: 2626

Title: Digital Signal Processing Techniques for
Improving Audio Clarity and Intelligibility

CERTIFICATE OF MAILING OR TRANSMISSION

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Typed Name: Jung-hua Kuo

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicant requests review of the final rejection mailed on July 14, 2005 in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheets (5 pages).

Note: No more than five (5) pages may be provided.

I am the:

- ☒ attorney or agent of record. Registration Number 44,780.
☐ attorney or agent acting under 37 CFR 1.34. Registration Number _____.
☒ If the required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-2315 (Order No. **05-002**). A copy of this sheet is enclosed.

Respectfully submitted,

June 11, 2007

Date



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Signed: _____

Typed Name: Jung-hua Kuo

Reasons For Pre-Appeal Brief Request For Review

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The reasons for the Pre-Appeal Brief Request for Review are set forth below.

In rejecting claims 1, 2, 4, and 21 under 35 U.S.C. §103(a), the Examiner did not establish that Lindemann et al. (USPN 6,097,824) in view of Rosbanck (USPN 4,641,361) discloses each and every element of the claimed inventions

Claims 1, 2, 4, and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback.

In independent claim 1, the dynamic range associated with each signal component (corresponding to one of the frequency bands) is independently and dynamically controlled (by the second instructions) by adjusting a gain factor (a) after applying the gain factor to a current sample of the signal component and (b) in response to comparison of the current sample to a threshold level. Applicants note that the claim is directed to a comparison of the "current sample" to a threshold level, where the claim defines "current sample" as a current sample of the signal component corresponding to one of the frequency bands," i.e., a current sample of a specific frequency band. This definition is also consistent with the dynamic range for each

signal component being independently controlled. In contrast, Neither Lindemann nor Rosback, either alone or in combination, discloses or suggests that the dynamic range is independently controlled in such a manner.

Lindemann is cited at col. 5, lines 40-46 as disclosing the second instructions for controlling a dynamic range associated with each one of the plurality of signal components (dynamic range compression gain calculation and application).

Rosback is cited at FIG. 3, elements 22, 24, 26, and 120, col. 4, line 66-col. 5, line 14, and col. 2, lines 59-66 as disclosing “adjusting a dynamic range (for example, compression) by changing a gain (gain control) after applying the gain to a plurality of frequency band audio signals at an amplifier and comparing the audio signals from the plurality of frequency bands to a threshold.” (Office Action, page 5, fourth paragraph).

The Examiner further contends that the gain of each of the pre-amplifiers is effectively controlled at an adder (see FIGS. 1 and 3, elements 34, 36, 38) which combines a gain control output with a gain clipper limiter output 30. (Office Action, page 3, first paragraph).

However, the input to the clipper/limiter 30 is the sum of the three gain adjusted frequency components produced by the VCAs 16, 18, and 20. (See col. 3, lines 22-26: “The three gain adjusted frequency components produced by the VCAs 16, 18, and 20 are recombined in a signal adder 28. The combined, gain adjusted audio signal at the output of adder circuit 28 applied to the input of a clipper/limiter 30.”) “The clipper/limiter 30 compares the amplitude of the gain adjusted audio signal with positive and negative limits, providing a control signal on an output line 32 in accordance with the results of the comparisons.” (Col. 3, lines 26-30). In other words, the clipper/limiter 30 compares the combined, gain adjusted audio signal output by the adder circuit 28 to positive and negative limits to output a control signal that is in turn output to the adders 34, 36, and 38 (see FIG. 1). As noted by the Examiner, each adder 34, 36, 38 combines a corresponding gain control output (22, 24, 26) with a gain clipper limiter output 30. (Office Action, page 3, first paragraph).

As is evident, the combination of Lindemann and Rosback does not disclose that each signal component (corresponding to one of the frequency bands) is independently and dynamically controlled by adjusting a gain factor (a) after applying the gain factor to a current sample of the signal component and (b) in response to comparison of the current sample to a threshold level.

In addition, while Rosback discloses that the input signal is amplified at an amplification level G via amplifier 120 prior to further processing, the amplification level G applied at amplifier 120 is not “the gain factor” that is applied to the current sample (of the signal component corresponding to one of the frequency bands) as generally recited in independent claim 1. Specifically, claim 1 recites “dynamically adjusting a gain factor after applying the gain factor to a current sample of the signal component and in response to comparison of the current sample to a threshold level.” In other words, after applying the gain factor (and after a comparison to a threshold level), the same gain factor (that was applied to the current sample of the signal component) is dynamically adjusted.

In contrast, Rosback specifically states “The amplifier 120 is included because the output of the converter 102 is quite low level, and it is desirable to amplify it to higher levels before further processing.” (Col. 4, line 58-col. 5, line 3). In other words, Rosback merely applies the amplification at amplifier 120 for ease of signal processing.

Furthermore, as is clearly shown in FIG. 3, amplifier 120 is not controlled or in anyway affected by the output signal of the gain control circuit 22, 24, or 26. As such, amplifier 120 cannot be applying the gain factor of the gain control circuit 22, 24, or 26.

Thus, neither Lindemann nor Rosback discloses or suggests that each signal component (corresponding to one of the frequency bands) is independently and dynamically controlled by adjusting a gain factor (a) after applying the gain factor to a current sample of the signal component and (b) in response to comparison of the current sample to a threshold level.

Withdrawal of the rejection of independent claim 1 and claims 2, 4, and 21 dependent therefrom under 35 U.S.C. §103(a) is respectfully requested.

Claims 3, 8-19, 25, 27, 28, 31, 41, and 51-53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Allen.

However, the addition of the additional secondary reference Allen does not make up for the deficiencies of Lindemann in view of Rosback as discussed above. Thus claims 3, 8-19, 25, 27, 28, and 31 dependent from claim 1 are allowable at least for the same or similar reasons set forth above with reference to claim 1.

In addition, similar to independent claim 1, each of independent claims 41, 52, and 53 also recites that the dynamic range associated with each signal component is *independently*

controlled by dynamically adjusting a gain factor (a) after applying the gain factor to a current sample of the signal component and (b) in response to comparison of the current sample to a threshold level. Thus, because the addition of the additional secondary reference Allen does not make up for the deficiencies of Lindemann in view of Rosback as discussed above, independent claims 41, 52 and 53, as well as dependent claims 42-51 dependent from claim 41, are also allowable at least for the same or similar reasons set forth above with reference to claim 1.

Withdrawal of the rejection of claims 3, 8-19, 25, 27, 28, 31, 41, and 51-53 under 35 U.S.C. §103(a) is respectfully requested.

Claims 5 and 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Szczebak.

Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Kates.

Claims 25-40 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of applicants' admitted prior art.

Claims 42-50 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Allen and applicants' admitted prior art.

Claim 58 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Takeo.

However, the addition of any or all of the additional secondary references does not make up for the deficiencies of Lindemann in view of Rosback as discussed above. Thus claims 5, 6, 20, 25-40, 52-50, and 58 dependent from claim 1 or 41 are allowable at least for the same or similar reasons set forth above with reference to claim 1.

Claims 22-24 and 54-57 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lindemann in view of Rosback, and further in view of Laurence and Kates.

However, the addition of the additional secondary references Laurence and Kates does not make up for the deficiencies of Lindemann in view of Rosback as discussed above. Thus claims 22-24 dependent from claim 1 are allowable at least for the same or similar reasons set forth above with reference to claim 1.

In addition, similar to independent claim 1, each of independent claims 54-57 also recites that the dynamic range associated with each signal component is each signal component

(corresponding to one of the frequency bands) is independently and dynamically controlled by adjusting a gain factor controlled by dynamically adjusting a gain factor (a) after applying the gain factor to a current sample of the signal component and (b) in response to comparison of the current sample to a threshold level. Thus, because the addition of the additional secondary reference Allen does not make up for the deficiencies of Lindemann in view of Rosback as discussed above, independent claims 41, 52 and 53, as well as dependent claims 42-51 dependent from claim 41, are also allowable at least for the same or similar reasons set forth above with reference to claim 1.

Withdrawal of the rejection of claims 22-24 and 54-57 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

Because the Examiner's rejections of claims 1-43 include legal deficiencies with regard to under 35 U.S.C. §102(b), 35 U.S.C. §103(a), and the MPEP, Applicants are entitled to a pre-appeal brief review of the final rejection. And based on the foregoing arguments, Applicants request that the rejection of these claims be withdrawn and the pending claims be allowed.

If the required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-2315 (Order No. **05-002**).

Respectfully submitted,



June 11, 2007

Date

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